

For IR Public Health column

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Do You Know What's In Your Drinking Water?

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Groundwater is one of our most important natural resources. In Lewis and Clark County, 70 percent of the population relies on it for drinking. It's also used to irrigate lawns and crops and water pets and livestock, among other things.

Private wells that tap into groundwater are not regulated by the government like public water systems are. It's up to individual homeowners to test their well water to assure its quality and safety.

Yearly Testing Recommended

The Lewis and Clark County Water Quality Protection District (WQPD) recommends that homeowners who have wells should test them every year for bacteria and nitrates. Bacteria are found everywhere in the environment and are naturally present in soil and vegetation. Most bacteria found in water don't cause disease, but some can.

Coliforms are bacteria that don't normally cause illness, but their presence in drinking water indicates that disease-causing organisms, or pathogens, could be in the water system. Most pathogens that can contaminate water supplies come from the feces of humans or animals. Testing drinking water for all possible pathogens is too expensive and complicated, but it's relatively easy and inexpensive to test for coliform bacteria.

Nitrates are essential for plants, but they're potentially harmful in drinking water. There are many sources of nitrates, including fertilizer, compost, manure piles, and septic systems. Nitrates also are a byproduct of plant and animal decomposition.

Nitrates are colorless and odorless. They're very soluble and don't bind with soil, so they easily migrate into groundwater. If your water well system is not protected and is in or near animal lots or agricultural land, heavy rains and flooding can wash nitrates into your well. Chemical spills and failed sewage systems also can potentially cause nitrates to enter the soil near your water well system.

Blue-Baby Syndrome

The biggest concern with nitrates is that high levels can cause “blue baby syndrome.” This condition can occur in kids under age 1 when contaminated well water is used to prepare infant formula. The child’s stomach converts nitrates into nitrites. When the nitrites enter the bloodstream, they interfere with the blood’s ability to carry oxygen to body tissues. Affected infants develop a peculiar blue-gray skin color and may become grumpy or sluggish, depending on the severity of their condition. The disease can progress rapidly to cause coma and death if it’s not recognized and treated properly.

Also, the Helena area has a rich history of mining. Because of this, the WQPD highly recommends that homeowners test their well water for metals, such as arsenic, copper, and uranium. If there’s any change with land use in your area, or if the color or odor of your drinking water changes, it’s a good idea to get your water tested.

Well Worth Protecting

One way to protect your drinking water is to protect your well from possible sources of contamination. Piling soil around the wellhead allows rain and floodwater to drain away from it. A tight-fitting cap will also prevent critters and contaminants from getting into the well casing.

The WQPD is a partner with Montana State University’s Well-Educated Program. This statewide program gives homeowners a discount on the cost of testing their well water. A recommended test called a “basic domestic analysis” looks for alkalinity, bacteria, nitrates, pH, and conductivity. It costs \$35. The Lewis and Clark Conservation District will reimburse \$25 of the cost to county residents once they get the results.

WQPD staff are available to talk to landowners about any other testing they might recommend.

In the Helena area, three labs offer well-water testing. They provide bottles for sample collection, or you can pick up Well-Educated sample bottles at the WQPD office in Room 220 of the City-County Building, 316 North Park. For more information, call the WQPD 457-8584.

For more information on private wells and health, visit the Environmental Protection Agency:
<http://www.epa.gov/privatewells>